CLAIMS

What is claimed is:

1. A method within a server device for facilitating a remote boot process in a client device, wherein the client device and the server device reside on a network, the method comprising the steps of:

receiving at the server device a boot request from the client device, wherein the client device requires boot files uniquely configured for the client device;

in response to receiving the boot request, generating a boot response to the client device that directs the client device to download boot files from the server device; and

sending a boot response to the client device, wherein the boot response directs the client device to download boot files from the server device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a boot request from all client devices on the network.

2. The method of claim 1 further comprising:

prior to sending a boot response to the client device, determining that the server device has sufficient resources to service a remote boot process for an additional client device.

3. A method within a server device for facilitating a remote boot process in a client device, wherein the client device and the server device reside on a network, the method comprising the steps of:

receiving at the server device a boot request from the client device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a boot request from any client device on the network;

determining whether or not the server device is able to service an additional boot request; and

in response to a determination that the server device is able to service an additional boot request, sending a boot response to the client device, wherein the boot response directs the client device to download boot files from the server device.

4. The method of claim 3 further comprising:

executing a proxy DHCP (Dynamic Host Configuration Protocol) service on the server device for processing a boot request, wherein a boot request is formatted as a PXE-extended (Preboot Execution Environment extended) DHCP Request message, and wherein the boot response is a PXE-extended DHCP Ack message.

5. The method of claim 3 further comprising:

executing a boot service on the server device for processing a PXE-extended Boot Service Discover message from a client.

6. A method within a server device for facilitating a PXE-compliant (Preboot Execution Environment compliant) remote boot process in a client device, wherein the client device and the server device reside on a network, the method comprising the steps of:

receiving at the server device a PXE-extended DHCP (Dynamic Host Configuration Protocol) Request message from the client device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a PXE-extended DHCP Request message from any client device on the network;

processing the received PXE-extended DHCP Request message within a Proxy DHCP service on the server device; and

sending from the server device a PXE-extended DHCP Ack message to the client device, wherein the PXE-extended DHCP Ack message directs the client device to download boot files from the server device.

7. The method of claim 6 further comprising:

receiving at the server device a PXE-extended Boot Service Discover message from the client device; and

processing the received PXE-extended Boot Service Discover message within a boot service on the server device; and

sending from the server device a PXE-extended Boot Service Ack message to the client device.

8. The method of claim 7 further comprising:

receiving at the server device an NBP (Network Bootstrap Program) Download Request message from the client device; and

processing the received NBP Download Request message within a TFTP (Trivial File Transfer Protocol) service on the server device; and

downloading from the server device an NBP file to the client device.

9. The method of claim 6 further comprising:

prior to sending the PXE-extended DHCP Ack message to the client device, determining that the server device has sufficient resources to service a remote boot process for an additional client device.

10. The method of claim 6 further comprising:

employing a self-throttling process to prevent the server device from servicing an additional remote boot process for an additional client device if the server device has insufficient resources for servicing an additional remote boot process.

11. The method of claim 10 further comprising:

executing a boot service daemon for monitoring an availability of the server device to adequately service additional remote boot processes.

12. The method of claim 11 further comprising:

computing the availability of the server device to adequately service an additional remote boot process based upon resources within the server device.

13. The method of claim 11 further comprising:

computing the availability of the server device to adequately service an additional remote boot process based upon resources within at least two boot servers in the plurality of boot servers on the network.

14. The method of claim 10 further comprising:

communicating an indication of available resources within the server device to at least one other boot server in the plurality of boot servers on the network.

15. The method of claim 10 further comprising:

stopping or suspending the Proxy DHCP service on the server device if the server device has insufficient resources for servicing an additional remote boot process.

16. The method of claim 10 further comprising:

restarting the Proxy DHCP service on the server device if the server device has sufficient resources for servicing an additional remote boot process.

17. The method of claim 10 further comprising:

communicating an execution status of the Proxy DHCP service on the server device to at least one other boot server in the plurality of boot servers on the network.

18. An apparatus within a server device for facilitating a remote boot process in a client device, wherein the client device and the server device reside on a network, the apparatus comprising:

receiving means for receiving at the server device a boot request from the client device, wherein the client device requires boot files uniquely configured for the client device;

generating means for generating a boot response to the client device that directs the client device to download boot files from the server device in response to receiving the boot request; and

sending means for sending a boot response to the client device, wherein the boot response directs the client device to download boot files from the server device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a boot request from all client devices on the network.

19. The apparatus of claim 18 further comprising:

determining means for determining that the server device has sufficient resources to service a remote boot process for an additional client device prior to sending a boot response to the client device.

20. An apparatus within a server device for facilitating a remote boot process in a client device, wherein the client device and the server device reside on a network, the apparatus comprising:

receiving means for receiving at the server device a boot request from the client device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a boot request from any client device on the network;

determining means for determining whether or not the server device is able to service an additional boot request; and

sending means for sending a boot response to the client device in response to a determination that the server device is able to service an additional boot request, wherein the boot response directs the client device to download boot files from the server device.

21. The apparatus of claim 20 further comprising:

first executing means for executing a proxy DHCP (Dynamic Host Configuration Protocol) service on the server device for processing a boot request, wherein a boot request is formatted as a PXE-extended (Preboot Execution Environment extended) DHCP Request message, and wherein the boot response is a PXE-extended DHCP Ack message.

22. The apparatus of claim 20 further comprising:

second executing means for executing a boot service on the server device for processing a PXE-extended Boot Service Discover message from a client.

23. An apparatus within a server device for facilitating a PXE-compliant (Preboot Execution Environment compliant) remote boot process in a client device, wherein the client device and the server device reside on a network, the apparatus comprising:

first receiving means for receiving at the server device a PXE-extended DHCP (Dynamic Host Configuration Protocol) Request message from the client device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a PXE-extended DHCP Request message from any client device on the network;

first processing means for processing the received PXE-extended DHCP Request message within a Proxy DHCP service on the server device; and

first sending means for sending from the server device a PXE-extended DHCP Ack message to the client device, wherein the PXE-extended DHCP Ack message directs the client device to download boot files from the server device.

24. The apparatus of claim 23 further comprising:

second receiving means for receiving at the server device a PXE-extended Boot Service Discover message from the client device; and

second processing means for processing the received PXE-extended Boot Service Discover message within a boot service on the server device; and

second sending means for sending from the server device a PXE-extended Boot Service Ack message to the client device.

25. The apparatus of claim 24 further comprising:

third receiving means for receiving at the server device an NBP (Network Bootstrap Program) Download Request message from the client device; and

third processing means for processing the received NBP Download Request message within a TFTP (Trivial File Transfer Protocol) service on the server device; and

downloading means for downloading from the server device an NBP file to the client device.

26. The apparatus of claim 23 further comprising:

determining means for determining that the server device has sufficient resources to service a remote boot process for an additional client device prior to sending the PXE-extended DHCP Ack message to the client device.

27. The apparatus of claim 23 further comprising:

employing means for employing a self-throttling process to prevent the server device from servicing an additional remote boot process for an additional client device if the server device has insufficient resources for servicing an additional remote boot process.

28. The apparatus of claim 27 further comprising:

first executing means for executing a boot service daemon for monitoring an availability of the server device to adequately service additional remote boot processes.

29. The apparatus of claim 28 further comprising:

first computing means for computing the availability of the server device to adequately service an additional remote boot process based upon resources within the server device.

30. The apparatus of claim 28 further comprising:

second computing means for computing the availability of the server device to adequately service an additional remote boot process based upon resources within at least two boot servers in the plurality of boot servers on the network.

31. The apparatus of claim 27 further comprising:

first communicating means for communicating an indication of available resources within the server device to at least one other boot server in the plurality of boot servers on the network.

32. The apparatus of claim 27 further comprising:

means for stopping or suspending the Proxy DHCP service on the server device if the server device has insufficient resources for servicing an additional remote boot process.

33. The apparatus of claim 27 further comprising:

restarting means for restarting the Proxy DHCP service on the server device if the server device has sufficient resources for servicing an additional remote boot process.

34. The apparatus of claim 27 further comprising:

second communicating means for communicating an execution status of the Proxy DHCP service on the server device to at least one other boot server in the plurality of boot servers on the network.

35. A computer program product in a computer readable medium for use within a server device for facilitating a remote boot process in a client device, wherein the client device and the server device reside on a network, the computer program product comprising:

instructions for receiving at the server device a boot request from the client device, wherein the client device requires boot files uniquely configured for the client device;

instructions for generating a boot response to the client device that directs the client device to download boot files from the server device in response to receiving the boot request; and

instructions for sending a boot response to the client device, wherein the boot response directs the client device to download boot files from the server device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a boot request from all client devices on the network.

36. The computer program product of claim 35 further comprising:

instructions for determining that the server device has sufficient resources to service a remote boot process for an additional client device prior to sending a boot response to the client device.

37. A computer program product in a computer readable medium for use within a server device for facilitating a remote boot process in a client device, wherein the client device and the server device reside on a network, the computer program product comprising:

instructions for receiving at the server device a boot request from the client device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a boot request from any client device on the network;

instructions for determining whether or not the server device is able to service an additional boot request; and

instructions for sending a boot response to the client device, wherein the boot response directs the client device to download boot files from the server device in response to a determination that the server device is able to service an additional boot request.

38. The computer program product of claim 37 further comprising:

instructions for executing a proxy DHCP (Dynamic Host Configuration Protocol) service on the server device for processing a boot request, wherein a boot request is formatted as a PXE-extended (Preboot Execution Environment extended) DHCP Request message, and wherein the boot response is a PXE-extended DHCP Ack message.

39. The computer program product of claim 37 further comprising:

instructions for executing a boot service on the server device for processing a PXE-extended Boot Service Discover message from a client.

40. A computer program product in a computer readable medium for use within a server device for facilitating a PXE-compliant (Preboot Execution Environment compliant) remote boot process in a client device, wherein the client device and the server device reside on a network, the computer program product comprising:

instructions for receiving at the server device a PXE-extended DHCP (Dynamic Host Configuration Protocol) Request message from the client device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a PXE-extended DHCP Request message from any client device on the network;

instructions for processing the received PXE-extended DHCP Request message within a Proxy DHCP service on the server device; and

instructions for sending from the server device a PXE-extended DHCP Ack message to the client device, wherein the PXE-extended DHCP Ack message directs the client device to download boot files from the server device.

41. The computer program product of claim 40 further comprising:

instructions for receiving at the server device a PXE-extended Boot Service Discover message from the client device; and

instructions for processing the received PXE-extended Boot Service Discover message within a boot service on the server device; and

instructions for sending from the server device a PXE-extended Boot Service Ack message to the client device.

42. The computer program product of claim 41 further comprising:

instructions for receiving at the server device an NBP (Network Bootstrap Program) Download Request message from the client device; and

instructions for processing the received NBP Download Request message within a TFTP (Trivial File Transfer Protocol) service on the server device; and

instructions for downloading from the server device an NBP file to the client device.

43. The computer program product of claim 40 further comprising:

instructions for determining that the server device has sufficient resources to service a remote boot process for an additional client device prior to sending the PXE-extended DHCP Ack message to the client device.

44. The computer program product of claim 40 further comprising:

instructions for employing a self-throttling process to prevent the server device from servicing an additional remote boot process for an additional client device if the server device has insufficient resources for servicing an additional remote boot process.

45. The computer program product of claim 44 further comprising:

instructions for executing a boot service daemon for monitoring an availability of the server device to adequately service additional remote boot processes.

46. The computer program product of claim 45 further comprising:

instructions for computing the availability of the server device to adequately service an additional remote boot process based upon resources within the server device.

47. The computer program product of claim 45 further comprising:

instructions for computing the availability of the server device to adequately service an additional remote boot process based upon resources within at least two boot servers in the plurality of boot servers on the network.

48. The computer program product of claim 44 further comprising:

instructions for communicating an indication of available resources within the server device to at least one other boot server in the plurality of boot servers on the network.

49. The computer program product of claim 44 further comprising:

instructions for stopping or suspending the Proxy DHCP service on the server device if the server device has insufficient resources for servicing an additional remote boot process.

50. The computer program product of claim 44 further comprising:

instructions for restarting the Proxy DHCP service on the server device if the server device has sufficient resources for servicing an additional remote boot process.

51. The computer program product of claim 44 further comprising:

instructions for communicating an execution status of the Proxy DHCP service on the server device to at least one other boot server in the plurality of boot servers on the network.